



00028



The Open University of Sri Lanka  
Faculty of Engineering Technology  
Industrial Studies (Agriculture) Programme  
Final Examination- 2010/2011  
**AEX4237 Irrigation and Drainage Engineering**

Date : 01-03-2011  
Time : 0930-1230  
Duration : Three (03) hours

---

**SECTION II**

- (1) Discuss the causes behind the decline of irrigation civilization in Sri Lanka
- (2) Write an essay on "Effect of irrigation on environment"
- (3) (a) Briefly outline the advantages of drip irrigation over surface irrigation.  
(b) What are the factors which limit the use of drip irrigation among Sri Lankan farmers?
- (4) (a) List the main purposes of irrigation.  
(b) "Rehabilitation of existing irrigation schemes is necessary to increase agricultural production in Sri Lanka" comment on this statement
- (5) (a) Discuss the natural factors causing the deteriorating of an irrigation project  
(b) What are the practical constraints of irrigation scheduling?
- (6) (a). Briefly explain the concept of Field capacity (FC), Permanent wilting point (PWP), Management allowable deficit (MAD) and Total allowable water (TAW) in relation to irrigation.  
  
(b). Chillies with a root depth of 0.8 m was planted in an irrigation scheme in the North-Central Province of Sri Lanka. This area consists of Reddish Brown Earth soil with field capacity and permanent wilting point of 22% and 10% on volume basis respectively. The bulk density of the reddish brown earth soil is 1.50 g/cm<sup>3</sup>. Allowable management deficit is assumed at 40% allowable depletion. Calculate the following.
  - (a) Total allowable water.
  - (b) Net irrigation requirement.
  - (c) If the application efficiency is 80%, calculate the gross irrigation requirement